

USAWC STRATEGY RESEARCH PROJECT

TRANSFORMING THE FORCE AND LOGISTICS TRANSFORMATION

by

Colonel Katherine M. Cook
United States Army

Professor Douglas V. Johnson
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 15 MAR 2006		2. REPORT TYPE		3. DATES COVERED	
4. TITLE AND SUBTITLE Transforming the Force and Logistics Transformation				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Katherine Cook				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College, Carlisle Barracks, Carlisle, PA, 17013-5050				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT See attached.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 32	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ABSTRACT

AUTHOR: COL Katherine Cook
TITLE: Transforming the Force and Logistics Transformation
FORMAT: Strategy Research Project
DATE: 31 March 2006 WORD COUNT: 8,807 PAGES: 32
KEY TERMS: Sustainment, change
CLASSIFICATION: Unclassified

U. S. Army transformation strategy addresses the imperative to change the Army from a Cold War oriented design to one that is more responsive, agile and adaptable to present and emerging threats across the spectrum of conflict. Transforming logistics and support for the force is an essential part of the transformation effort. This project examines the short history of U. S. Army transformation and the logistics transformation goals, objectives, programs and enablers that have emerged from the transformation initiative. It also covers the effects of recent conflict experience on transformation efforts and how that has affected the vision of logistics transformation. Finally, the project poses thoughts on logistics transformation focus and recommends some areas that could benefit from attention, particularly improving lethality of logistics units, and specifically recognizing and developing lethality as a capability in CSS formations.

TRANSFORMING THE FORCE AND LOGISTICS TRANSFORMATION

U. S. Army transformation strategy addresses the imperative to change the Army from a Cold War oriented design to one that is more responsive, agile and adaptable to present and emerging threats across the spectrum of conflict. Transforming logistics and support for the force is an essential part of the transformation effort. This paper examines the short history of U. S. Army transformation and associated logistics transformation goals, objectives, programs and enablers that have emerged from the transformation initiative. Although many improvements may apply to other sectors of the Army and Joint force, the scope of this paper is focused on Army CSS elements. It also covers the effects of recent conflict experience on transformation efforts. As the force transforms, is the current logistics transformation focus on the right attributes, or should attention and innovation also be made in other areas, such as training or improving lethality in logistics units?

Transformation Setting: Recent History

Prior to 1999, senior Army leaders had recognized the need and the opportunity for change from a cold-war era force. With no peer competitor, a window of opportunity for change appeared on a large scale. The foremost questions in the defense community were, what threats will the Army need to be prepared to engage, and how quickly and adequately can we respond? The Army penchant for assessing employment performance in operations captured valuable insights in Desert Storm, Somalia, Haiti and Kosovo. It primarily highlighted that it took a long time to put an effective heavy force on the ground, wasn't agile in transportability, could be too heavy for the area of operations infrastructure, and much time and effort had to be made to adequately sustain it (creating a large transportation requirement and logistics footprint in the area of operations). The media acted as an additional catalyst, magnifying and graphically portraying military operational deficiencies and successes in near- or real-time. This was viewed as an ideal time to introduce wholesale change to ensure our Army could successfully engage threats across the spectrum of conflict, before change would be forced upon us through learned failure at the hands of an unrealized but lurking threat. It also brought two elements increasingly to the forefront that made transformational change more imperative. Firstly, although the word "globalization" had not been created, it was easy to see that events occurring across the globe, sometimes in unfamiliar places, had impact on other nations and persons.¹ This global "interdependence" aspect of globalization was coming to the fore and highlighted the need for swift and effective military action, as demonstrated in crises in Kuwait, Bosnia and Kosovo.² Another aspect that made Army transformation more imperative was the rapidly accelerating

rate of technological capability, particularly in communications (radio, television, video, and most importantly, the internet).³ Breathtaking leaps in technological innovation and improvements were occurring, with network-enhanced capabilities and numerous enablers that held much promise for the Army to perhaps meet the goals to be better, faster, smarter, and hopefully smaller, reducing its support requirements and forward footprint. With the absence of an obvious major conflict on the horizon, there was no better time to make sweeping changes for a better future force.

Transforming the Force-1999 Forward

"If you don't like change, you're going to like irrelevance a lot less."

-attributed to GEN Shinseki

In the fall of 1999, then-Chief of Staff of the Army (CSA) Eric Shinseki boldly pushed the US Army into a comprehensive transformation effort. Although some important work had been done to previously to "turn concepts into capabilities", notably Force XXI and the Army After Next initiatives, the entire Army was not impacted nor was there a feeling of having a stake in its efforts.⁴ With the advent of a publicly advertised campaign to change the Army, GEN Shinseki articulated a vision and committed all elements of the Army to a program of change. The overall goal was to shape the Army "...to meet the requirements of the next century...: Soldiers on point for the Nation transforming this, the most respected Army in the world, into a strategically responsive force that is dominant across the full spectrum of operations."⁵ Later that year, he made the case for transformation by describing to members of Congress the attributes that the Army strives for: "...more responsive, deployable, agile, versatile, lethal, survivable, and sustainable."⁶

The Army Transformation Campaign Plan

Every organizational part of the Army had a mission to articulate in the Army Transformation Campaign Plan (ATCP) what objectives, goals, and milestones must be achieved to make the Army vision a reality: roughly, on what day was somebody doing something to make the transformation vision a reality. This amazingly large electronic spreadsheet, which operated like an Excel document with embedded links, comments, and color coding, required all organizations to make the best estimate on what needed to be done, when, by whom, and link to supporting organizations. The plan was not so much aiming for perfection as it was an open calendar into 2030 and beyond. It required each "line" owner to

understand the overall objectives involved in/central to creating an initial force, an interim force, and an objective force, and to describe (or best estimate, if outside the POM) what their organization's supporting goals and milestones should be, when a critical action or decision might occur, and wherever possible link them to other organization's goals and/or milestones. The TCP was expected to change as organizations attained better granularity on programs and conceptual goals, and as new capabilities emerged. However, to get quality, updated input across the Army was challenging. To ensure organizations understood the importance of this input, TCP changes and new input were reviewed by the VCSA, initially twice weekly, with general officers in attendance representing each line of operation in the TCP briefing the changes. It was made known that the CSA personally reviewed a bi-weekly updated plan, and met with the Chief, Army Transformation Office and/or the VCSA often. The plan highlighted critical activity with green/amber/red coding for goals, objectives, and milestones and was updated frequently; changes were also highlighted, and eventually, and most importantly, programs within the POM cycle were tied to resourcing.⁷

Logistics Aspects of the TCP

“Without a transformation in logistics, there will be no transformation in the Army”

—attributed to GEN Shinseki, September 2002

These days, any reader of military transformation in the can easily see that military transformation concepts are nested.⁸ To put logistics transformation in context, concepts are nested in the overall Army transformation plan. It is important to note that current work on establishing a single seamless logistics system that can work in a joint, interagency, and multinational partner environment is not new. Modularity, distribution based logistics, and improved asset visibility, in fact much of the change the Army logistics community has sought under the transformation banner has been in the works for several years prior to the 2000 effort to formalize change (for several references see TRADOC PAM 525-70's series).⁹ The difference is the catalyst for implementing change: the Army Transformation Campaign Plan provided a better way to get visibility and support for programs that contribute directly to transformation. The overarching logistics transformation goals were specific and significant: make the force more deployable, agile and reduce the battlespace footprint. However, it was, and is, difficult to translate with metrics how badly needed technological improvements in logistics processes will reduce the logistics “burden”, and by what date reductions will be achieved. The benefit was to show relevance of these enablers to provide an overall capability in the plan, and in doing this, it

gave logistics initiatives new visibility and importance. The Army needed to improve strategic responsiveness by emplacing a “combat capable brigade anywhere in the world in 96 hours” after wheels up, a division on the ground in 120 hours, and five divisions within 30 days.¹⁰ The Army Strategic Mobility Program (ASMP) was already concentrating on structural and strategic lift improvements, so the dictum to find ways to get the force to deploy faster provided additional momentum. It brought new life to the discussions of high speed sea lift and other enablers, and support for additional funding of the USAF’s C17s and the US Navy’s roll-on/roll-off and other ship programs. Another goal was to adopt best business practices to improve support to the force, which was targeted primarily at improvements at the wholesale logistics level.¹¹ The Revolution in Military Logistics effort begun under former CSA GEN Reimer gave the logistics community a bit of a head start on improving sustainment. Leveraging the network to create a seamless logistics system with right-sized stockage levels was envisioned as the way ahead to make logistics support to the force more agile, although it was easier to articulate than to effect.¹² There were several programs utilizing the internet to attain asset visibility but these were not linked, and decisions on who could view the data kept much of the utility hidden.

The most challenging goal was the directive to significantly reduce the battlespace footprint; the example of Desert Shield’s “iron mountain” was often brought up as precisely what logisticians needed to change. Pressure to say when the logistics footprint would be reduced by a certain percentage—by what year—was constant. The challenge was that the biggest contributor to reducing the battlespace footprint wasn’t significantly changing: the force structure was remaining the same. Existing or emerging technology enablers would aid in increasing the agility of the supply system, but did not appear to yield significant footprint reductions. Accelerating support to the foxhole could not be translated into cutting support units in the event of a major conflict. The idea to reduce the battlespace footprint centered on reducing logistics assets in the area of operations, but seemed to miss the point on capability. If fewer CSS assets were deployed, how much risk was the force going to assume? Logistics seemed less of an enabler and more of a drag on the force. “Tooth to tail” discussions in the ongoing Quadrennial Defense Review effort tried to latch on to “how much” all the existing and near-future logistics programs would yield in support costs and support unit reductions in the transformation effort.¹³ The best estimate, as the force structure had no looming reductions, was that the advent of the Future Combat System with commonality in platform size, repair parts, improvements in fuel efficiency, more effective weapons systems with smaller caliber ammunition with greater lethality, and embedding new technology such as prognostic and diagnostic tools, was expected to lead to a smaller logistics footprint, so estimates were tied to

the arrival of the Future Combat System.¹⁴ This did not mean that the search for better logistics efficiency stopped; the push by the logistics community leadership continued towards better, faster, smarter, smaller, cheaper logistics support to the force.

11 September 2001 Onward: "Evolving Army Transformation"¹⁵

In 2003 the Army initiated an internal examination of its transformation plans in light of these new requirements and dramatically adapted its transformation efforts to accommodate the new operational environment, while still preserving development of improved future capabilities.¹⁶

Claude M. Bolton, Jr. Assistant Secretary of the Army, et.al.
before the House Armed Services Committee, March 16, 2005

This 'long war' is the central security issue of our time. The ensuing campaigns in Iraq, Afghanistan and other theaters in the Global War on Terror have added new impetus and urgency to transformation efforts that were already underway in this Department.¹⁷

-Secretary of Defense Donald Rumsfeld
before the House Armed Services Committee, February 8, 2006

11 September marked an end to the opportunity to concentrate on transformation in a time of peace. It also served to accelerate transformation efforts. Afghanistan and Iraq have provided both training and testing ground for emerging technology and force employment concepts. Operation Enduring Freedom was a great lesson in the power of joint and multinational operations, special operations and interagency capabilities; space enabled communications, and reinforced the Army's goal to become more joint and expeditionary. Based on these experiences, Army transformation plans were revised in 2003 and "...in light of these new requirements...dramatically adapted its transformation efforts to accommodate the new operational environment, while still preserving development of improved future capabilities."¹⁸ This began an accelerated fielding of equipment to support deployed forces in Iraq and Afghanistan; improved and new soldier force protection items such as improved body armor, up-armoring for light vehicles, and aviation survivability gear were aggressively acquired and pushed to Iraq and Afghanistan.¹⁹ Operation Iraqi Freedom highlighted many lessons, particularly the need to rebalance the force to increase agility, flexibility and responsiveness and improve on Joint, interagency and multinational interdependencies. As directed by GEN Pete Schoomaker, the Army's current Chief of Staff, in order to get the right mix of capabilities to the combatant commander, "...our Army must move toward modular capabilities-based unit designs nested within the joint network and enabled by a Joint and Expeditionary mindset."²⁰ As modernization (and recapitalization) efforts have accelerated to meet the challenges of today's operational environment, the most dramatic change in the force is the design change to

modular, brigade sized units. The objective is to “create units that are more relevant to Regional Combatant Commanders; generate versatile combat power with units that are

- More self-contained, sustainable, lethal force packages
- Organized with capabilities for the full range of missions
- Truly joint interdependent – a trained and ready member of the joint force
- Comprised of adaptive, competent, and confident Soldiers and leaders”²¹

In October 2003, the US Army Futures Center was established to be the “architect for change” and transformation for the Army. All enabler requirements and concepts for changing the force (for example, modularity) must be approved via the Futures Center; all changes are viewed through a “joint lens” for applicability in operating in a Joint and Combined operational environment.²²

Army Logistics Transformation and Logistics Experience in OIF

In light of the changing transformation priorities for the force, how has recent experience at war changed logistics transformation goals? In 2002, the goals for logistics transformation were to enhance strategic responsiveness, reduce logistics costs, and reduce logistics in the battlespace footprint.²³ Experience in OEF and particularly in OIF amended logistics transformation to “enhance our current capabilities while transforming Army logistics for tomorrow”, keeping aligned with the Army approach to transforming the force as it continues to provide the best capabilities for the force currently in conflict areas.²⁴ Simply put, “Our number one priority is making sure Soldiers get what they need in order to fight and win.”²⁵ As Army transformation efforts have focused on integrating enhanced capabilities into the force now, there appears to be a shift away from discussing reductions in logistics footprint, costs, and strategic lift improvements and focusing more on what can be improved today to execute support for a Joint and Combined force.

In March 2004, LTG Claude Christensen, (then) Army G4 testified before the House Armed Service Committee (HASC) on the logistics challenges and changes that must come about in light of our experience in OIF.

“To sustain combat power, we must have the ability to “see” requirements on-demand through a **logistics information network**. We must develop a **responsive distribution system** enabled by in-transit and total asset visibility and managed by a single owner who has positive end-to-end control in the theater. The Army needs a **robust, modular force-reception capability** – a dedicated and trained organization able to quickly open a theater and support flexible, continuous sustainment throughout the joint operations area. Lastly, we need an **integrated supply chain** with a single proponent who can leverage all resources in a joint, interagency and multinational theater....If we do not connect

Army logisticians, improve the capability of the distribution system, modernize force reception, and provide integrated supply management, we will study these same lessons after the next major conflict.²⁶

“Connecting Army Logisticians” recognizes the importance of building an automated logistics requisition, visibility and communication system to reach a larger logistics transformation goal: establishing a distribution-based supply system on a non-linear, non-contiguous battlefield.²⁷ During OIF, even the best trained units could not electronically “blast” requisitions successfully due to extended distances and inadequate communications capability, and there was little capability to gain materiel asset visibility.²⁸ To remedy this, four tasks were identified: #1-Connect Critical Logistics Nodes, #2-Implement Movement Tracking System (MTS), #3-Field the Battle Command Sustainment Support System (BCS3), #4-Upgrade the Standard Army Retail Supply System (SARRS) with Native Radio Frequency Identification (RFID) Capabilities. Resolving these issues will provide the capability to:

- Calculate requirements accurately
- Tell suppliers what Soldiers want or need
- Know that suppliers received the requisitions
- See progress in the fulfillment of the requisition
- See the location of supplies in the pipeline
- Communicate with suppliers/customers to prioritize shipments or to take other actions²⁹

The solution for the first task, Connecting Critical Logistics Nodes, is to field the capability to access satellite communications to pass/receive data. During combat activity, units could not electronically send requisitions. The Combat Service Support Very Small Aperture Terminal (CSS VSAT) satellite communications system works in conjunction with the wireless Combat Service Support Automated Information System Interface (CAISI) to provide fast, uncomplicated connectivity to the internet at virtually any time and place.³⁰ This allows users to pass requisitions, get updated information on the status of requisitions and gain visibility on where sources of supply are. This capability is operating in deployed units now.

The second task, “Implement MTS” highlights a visibility capability that operated with great success during combat operations in OIF. It was sparsely and hurriedly fielded and had some communications restrictions as it is a non-secure system, but was the single best logistics communications tool that the Forward Support Battalions (now BSBs) and a few other logistics units had during the war.³¹ MTS “provides crucial visibility on materiel and distribution in theater...” and is “...a vital link in ensuring the Army consistently delivers in-transit visibility, controls logistics assets, and performs vital distribution management functions worldwide.”³²

The distribution goal is to provide "...one MTS in every five tactical distribution vehicles, one in every two military police vehicles, one in every two movement control team vehicles, one in every combat service support company level command and control vehicle, and one in every ground ambulance. This fielding ensures every distribution convoy leader, all critical mission platforms, and any platform that controls vehicle movement on the battlefield is equipped to connect to command and control elements from anywhere on the battlefield."³³ This also vastly improves logistics units' communications capability. Although this will not completely resolve the situation of the scarcity of radios or any other approved communications in CSS units, from the BSB to echelons above Corps (EAC), it will be a dramatic and welcome improvement, particularly for support assets above the BCT. Lack of communications capability on deployments have put CSS Soldiers in high risk situations, so individually they often seek out-of-pocket/shelf commercial communications remedies for deployments (examples: CB radios during Desert Shield/Desert Storm, and hand-held short distance radios for OIF). This can cause frequency problems with other communications. The unit alternative is hand-and-arm signals. At times, CSS leaders have had no other way to control convoy assets without radios other than dismounting and resorting to hand and arm signals, not the preference during combat operations.³⁴

Battle Command Sustainment Support System (BCS3) provides the user the ability to view the battlefield with logistics information superimposed on it. However, this is not a secure system and may not be as comprehensive on portraying situational unit positioning as Force XXI Battle Command, Brigade-and-Below (FBCB2). This is a critical capability that needs swift development and fielding throughout CSS units. During OIF, no logistics units had visibility of the battlefield other than the terrain they could observe. FBCB2 capability to see units on the battlefield was not fielded to any logistics units other than key senior logisticians, who were normally not located with the preponderance of support assets for the BCTs.³⁵ 3ID FSBs largely operated in the blind, usually receiving couriered orders on when and approximately where to re-locate hours before executing movement. Locations of supported units and supporting logistics units had to be ascertained by and exercising all means of communications and friendly human intelligence, and "best guess".³⁶ BCS3 also provides in-transit visibility. It is a logistics information-bundling capability, joining information from ...over 900 disparate Army logistics and in-transit visibility systems and other fragmented data sources."³⁷ BCS3 is "the Army's portion of the Joint Logistics Common Operational Picture (LCOP) and provides the initial capability of Global Combat Support System (GCSS), the joint program for logistics automation and decision support".³⁸ It is viewed as an essential decision support capability to the logistician, and

underwrites the ability to achieve “distribution-based logistics: velocity over mass; centralized management with decentralized execution, multi-nodal/multi-modal execution; maximum throughput; minimum essential stockpiling; seamless two-way flow of resources; in-transit visibility of materiel; and near real-time Combat Service Support (CSS) situational understanding.”³⁹

Task #4, upgrading SARSS with radio frequency identification (RFID) provides logisticians the tools to read and write RFID tags for item receipt and release. RFID helps provide an answer to the ageless Army question of “where’s my stuff”, and potentially gives visibility to logisticians at all levels to account where items are during transit to its intended destination. This capability existed before current operations but had limited distribution prior to OIF. This will greatly assist in achieving better clarity on materiel location and help minimize unit re-ordering.

One recent discovery of modular design implementation, which will be discussed later in this paper, is that re-tooling support units for better automation capability is essential in order to “see, account for and control the thousands of equipment changes to build and fight the Modular Army”.⁴⁰ Upgrades of the Standard Army Management Information Systems (STAMIS) would help the Army to “accurately determine funding requirements and priorities, predict and allocate resources to set the force, account for and track readiness, assure accountability of sensitive items, [and] implement ARFORGEN strategy”.⁴¹

The Army’s goal to Modernize Theater Distribution strives to provide three logistics capabilities: “Provide total situational awareness, provide modernized delivery platforms, and provide an integrated distribution process”, with the ultimate objective to get swift, responsive distribution-based materiel support to the right location.⁴² MTS, RFID, and BCS3 all contribute to provide enhanced materiel and overall logistics situational awareness. The key challenge is getting these assets fielded in adequate numbers throughout the force. This may be achievable for OIF/OEF operations, however if the Army executes another action like OEF or OEF in the next few years, the capability may not be resident across AC/RC logistics units due to the cost of resource competition with fielding other important enablers across the force. The Army’s wheeled vehicle recapitalization and modernization program aims to provide the force with vehicles updated with the latest technology as well as incorporating some new equipment. Balancing the regeneration of the current truck fleet consists of: M915 series trucks (first fielded 1978), Family of Medium Tactical Vehicles (FMTV-first fielded in 1996), HMMWV family of vehicles (first fielded in 1985), Heavy Equipment Transports (HET-first fielded in 1993), Heavy Expanded Mobility Tactical Truck (HEMTT-first fielded in 1982), Palletized Loading System

(PLS-first fielded in 1993), and work on other associated trailers. Although recap of the truck fleet has been a recognized requirement for years, experience in recent operations with a sharp increase in wear and tear on the fleet and force protection lessons from engagements with threat elements (particularly Improvised Explosive Devices (IEDs)) has highlighted the need for additional vehicle armoring and other force protection measures. An ancillary effect of improved force protection on the vehicles is the degraded haul capability of the vehicles, unplanned wear and tear on vehicle hinges, frames and chassis, and exposed needed improvements in force protection, which is also translated into additional costs.

Another area that has plagued US ground forces for years is the ability to receive the force in the area of operations and establish sustainment support. Past experience has had operational units open and operate ports of embarkation, most recently in OIF, and execute support functions until adequate CSS power is on the ground to take over. This mission is a distraction and drain on elements that should be oriented on establishing operations in theater. To Improve Force Reception, a Theater Support Command (TSC) with sustainment brigades that will have theater opening capability is the proposed fix; ultimately, the TSC is envisioned to be the controller of all ground personnel reception and logistics assets flowing into theater, with total visibility of logistics, from all sources to the units.⁴³ Sustainment brigades are being designed in view of the modular design that is being applied at the BCT level. The brigades will "...move rapidly into an area of responsibility and immediately receive joint and coalition forces deploying into that area. It can provide life support, port clearance, force protection, communications, and initial distribution for forces arriving into theater."⁴⁴ This is an important change to the present logistics array of units, as it begins to establish in-theater logistics unity of effort in the TSC with in-theater CSS assets.⁴⁵ As modularity is applied to the TSC's Sustainment BDE designs, the reconfiguration of Army Pre-positioned Stocks (Afloat) into Army Regional Flotillas (ARF) dovetails with this change:

"At the core of each of the flotillas are two large medium-speed roll-on/roll-off (LMSR) ships. One of these ships contains a maneuver brigade task force set of equipment. This ship will deliver the capability of one armored and one mechanized infantry battalion, a package of brigade combat support and combat service support capabilities, and 15 days of supplies. The second of these ships will contain equipment for units echeloned above brigade. A third vessel in the flotilla, a roll-on/roll-off ship with a shallow draft, will provide the capability to support humanitarian assistance and disaster relief operations. Finally, each flotilla will include a fourth ship with sustainment stocks and a fifth vessel will be loaded with ammunition. The current requirement calls for these last two ships to carry sufficient supplies for 2.5 present-day divisions for 30 days, but the Army is reviewing the mix of commodities to best support its forces under modularization."⁴⁶

Clearly, the effect of modularizing logistics units above the BCT level to better task organize for opening and establishing a theater coupled with the ARF's improved logistics responsiveness and flexibility, and will enable regional commanders to more rapidly establish a combat power presence wherever needed. It may reduce the battlespace footprint as well, but this remains to be validated.

The fourth capability the logistics community seeks is to effectively support the Soldier by Integrating the Supply Chain. The methodology for improvement is by establishing four capabilities:

- constant, *total asset visibility* from the initial order to the asset provider to the requestor;
- integrating processes and information systems architecture* by using the best available software to facilitate better logistics delivery, accuracy, and visibility;
- utilize *best business practices* to enhance and measure improvements in supply chain management, and ensure the best type support for the best performance of weapons systems and equipment; and
- create a seamless linkage* to integrate vendors, logistics agencies, and requesting elements to create more proactive support to the Soldier, allowing the vendors and government re-supply entities to anticipate shortages via access to Army asset visibility.⁴⁷

All of these programs are either desired or emerging attributes to better support the force. Aggressive efforts are being made now to better connect the Army logistician.⁴⁸

Transforming Support for the Force: Modularity and ARFORGEN Implementation

Another part of Army logistics transformation that is currently being planned and has a huge impact on the lives and careers of CSS Soldiers is modularizing Army CSS force structure. This is probably because much of the work on CSS force structure re-design has not been formally approved, although this concept, to create a more responsive, agile, deployable force to better fit combatant commander requirements, has been underway for years with varying degrees of attention and effort.⁴⁹ As the first CSS unit type to undergo re-design in the operational context of a non-linear, non-contiguous 360° battlespace, the Brigade Support Battalion (BSB) is replacing the Forward Support Battalion (FSB) and is now an integral and essential part of the BCT. The BSB has more robust support capabilities that migrated from the elimination of the Main Support Battalion, notably in increased transport and organic water production. The FSB had single function companies and now has multi-functional companies employed with BCT battalion task force elements when deployed. The BSB has been

employed, tested and deployed to OIF. Whether this is a workable design under combat conditions as experienced in the first 30 days of war, which is not the same environment in present-day Iraq, remains to be seen.

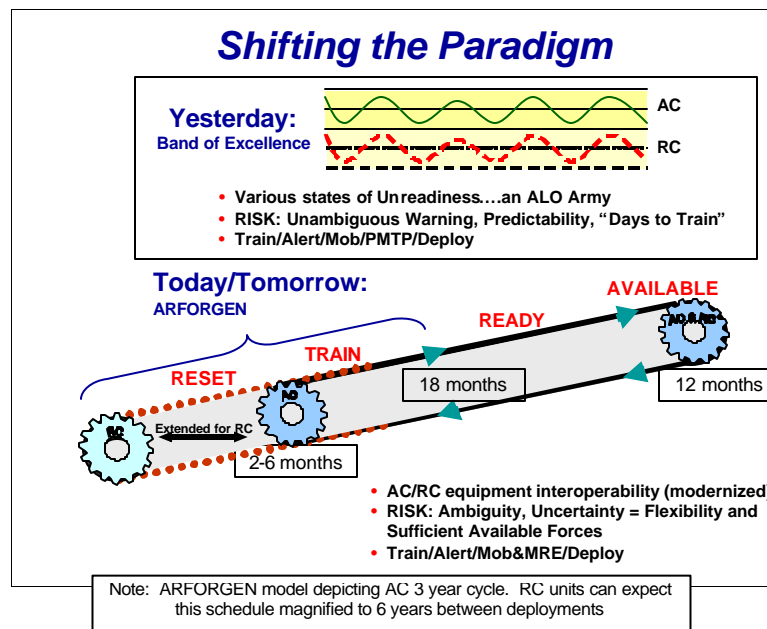
As previously discussed, the BSB is being fielded with new enablers to provide the BCT with improved support capability; with VSAT, more MTS fielding and BSC3, the BSB should have improved requisitioning capability and asset visibility. It is also being provided with an increased force protection capability to enable it to support the BCT via the distribution based support concept. Increased lethality and survivability for the FSB has been sorely needed; this is being done by fielding the BSB more weapons systems and vehicle protection. As the BSB is now officially part of the BCT, it will also be part of BCT resourcing considerations for training, which will hopefully improve training planning, resourcing and Soldier/unit field skills.

Modularity will hopefully provide improved agility and capability to all support elements. However, a concern is the time it will take to execute CSS modular re-design, and the financial and training resourcing it will take to make these CSS modularized assets capable to exercise distribution-based logistics. The competing costs of improving a force while it is at war may slow the rate of conversion. The Long War is a costly endeavor, even without transformation expenses. With competing demands for scarce resource dollars, and two thirds of the Army's support structure in the reserves, completing modularity for the force and seeing appreciable associated benefit with reducing the battlespace footprint may be several years. In March 2005 a Government Accounting Office (GAO) preliminary report on Army modularity noted:

The Army also faces a number of decisions in finalizing its plans for creating modular support brigades. **Modular support brigades that will replace the current division-based combat service and support structure are not scheduled to be fully in place until fiscal years 2009-10.** The Army has finalized the designs and requirements for three of the five types of support brigades, but has not yet made final design decisions for the other two. **The support brigades are key components of the Army's concept of modular forces being more responsive and expeditionary than current forces. Until the modular support brigades are fully organized, equipped, and functional, the Army's modular forces would not have these capabilities, and in the interim, combat service and combat service support would need to be provided by existing division-based support organizations.**⁵⁰ [Author's Note: highlights added for emphasis].

Coupled with the modularity conversion plan, the Army Force Generation (ARFORGEN) planning cycle is designed to provide a time template for all Army units, active and reserve, to expect deployment/re-set/training cycles. Recently released this February, the 2006 Army Posture Statement views ARFORGEN executed in the context of the National Security Strategy. It will allow ...[scheduling] deployment windows for our units while balancing the requirements

associated with transforming, modernizing, implementing a new global stationing plan, and other mission demands.⁴⁵¹ Obviously, no one can predict what crises are ahead, but ARFORGEN will provide a planning template that will allow Soldiers, units, and family members to have some expectation of the future. The following shows the ARFORGEN cycle.⁵²



All active component Army units can expect to complete a readiness cycle in three years, or six years for reserve components. An associated issue with ARFORGEN is the effort to establish a Soldier/unit habitual assignment pattern that will allow Soldiers and their families an improved degree of surety what post they will reside at or near during their Army career. This will allow soldiers and military families more stability, to perhaps establish better roots in a community and make better plans on schooling, neighborhoods, community participation and investment decisions such as buying a house.

It is unclear how ARFORGEN will work for the CSS community. CSS modular designs above BCT level at the time of this writing are publicly incomplete. CSS Soldiers and the Army have benefited from Soldier assignments within the band of logistics units operating at the last tactical mile with the BCT, to working at levels above Divisions. As we create more multi-functional support elements and move away from functional support, it behooves CSS leaders to encourage and train CSS Soldiers to gain more multi-functional support experience whenever

possible. CSS Soldiers serving at different levels of support gain a better understanding of how the Army and its support system operates and can improve, and creates better leaders. There may be challenging stationing decisions for CSS units as the Army decides how these units and CSS Soldiers will fit in the ARFORGEN stationing plan.

Implications for the Army's Dependence on the Reserve Component

Another area of concern is that roughly two thirds of CSS is in the reserve component, while two thirds of the combat arms are in the active component. If the present ratio for a deployed Division-level unit is equal to an echelon above division (EAD) unit, and with active force units currently expecting a three year cycle and reserve elements expecting six years, active duty CSS units appear to be facing much shorter deployment cycles. A Congressional Budget Office examination of Army restructuring published in May 2005 noted that:

Under CBO's assumptions about the level of support that a modular force might require, up to 70 percent of the personnel needed to support the Army's active combat forces would come from the reserve component, as opposed to 60 percent for the current force....In general (without considering the other possible effects of modularity), that increase in dependence would represent an additional 18,000 to 19,000 reserve personnel who would have to be mobilized and deployed for a major combat operation.⁵³

Transforming Support: Add Focus on Improving CSS Lethality

Resourcing logistics transformation, or innovation, is a continual struggle. It is difficult to contemplate adding more requirements to a long list of improvements requiring fiscal support. However, it appears the Army has harvested generally the same lessons from OIF/OEF that have been learned in Desert Shield/Storm: improve visibility, speed, distribution, and reduce logistics in the battlespace wherever possible. What has not been recognized is the deficit in CSS lethality capability in a changed battlespace. Modularity has brought an expectation and reality that units will provide their own force protection, whether in convoy/movement or in a stationary footprint. What has not been thought through and provided to the CSS community with some teeth for the "tooth." There is a need to provide CSS units the capability to identify, intercept and kill immediate, small element threats to dissuade further action. As of this writing, some CSS units, primarily the support elements in the BCT, have been given added weapons capability and more armoring. This is not the same as adding a lethal capability to the CSS force structure. All CSS units need a designed, integral capability added to each formation that is manned and equipped to provide aggressive force protection in addition to its manning and equipping for its support mission. These should be CSS MOS Soldiers but have a designated lethality section added to each CSS formation, not add on an additional mission to CSS

elements. This is necessary to provide the actual capability of enhanced unit lethality: Soldiers will not just think it is another additional mission they must do in addition to carrying out their individual force protection and occupational specialty. Soldiers across the Army have the warrior ethos; but in CSS formations they should be given the capability for applying defensive force. CSS formations should have the capability to pursue or interdict attacks to mitigate further aggressive threat attempts. This lethality capability should be developed by applying the doctrine, organization, training, leader development, materiel, personnel and facilities (DOTLMPF). Currently, changes are being made with only part of the DOTLMPF being thought through. This is particularly evident in our reserve CSS formations, but is glaring at any level above the BCT. There is also a prevalent mindset that the changes being made to the CSS formations are for the problems occurring in the current battlespace. During the execution of the war in Iraq, it was clear that CSS units need and must develop the capability to handle threats and protect its force. Although attacks on convoys, not perimeters were the usual threat, in any wartime environment CSS units need the lethal capability to deter attacks, and interdict and defeat them when required. During OIF, unless units were augmented with military police, air defense augmentation, or other heavily armed elements, there was little in CSS formations to accomplish these tasks. Presently, there is no doctrinal assurance or expectation that CSS units will have a lethal capability, or that failing the receipt of those improvements, that units will be augmented with other force protection. Lethality augmentation that is available for OIF rotations will not be available if there is a quick call to war.

The Army's most vulnerable part of the force on the battlefield is its CSS formations. This is not due to any lack in our Soldiers' attitudes or individual fighting capabilities. It is a deficit in applying lethality in a more aggressive form, and as a concept and capability, to the CSS formation. Applying lethality as a concept to those CSS elements most likely to deploy first in a conflict, not just the support elements in the BCT, is essential. The ARFORGEN initiative may help define what CSS units are most likely to deploy first; it may also expose the lack of depth in some of the CSS units and missions. Assessing what the force protection mission expectation is of CSS units on a fast moving battlefield with bypassed threat elements should be established and in turn, create the lethality capability for the CSS formations through improvements in training, education, and equipping. These three inter-related areas are crucial aspects of improving support to the force; each affects the capability of a CSS unit to attain agility on the battlefield, execute its mission and maintain combat power for itself and the supported units; not just survive, but have the enemy think twice about attacking. Even in light of previous discussion on the expense of recapitalization and modernizing the force structure and

wheeled equipment, it is essential that reserve and active CSS elements are provided with more equipment, or at least fielded a high percentage of communications, weapons, and force protection capability, beyond those items that are fielded to provide better support to the force.

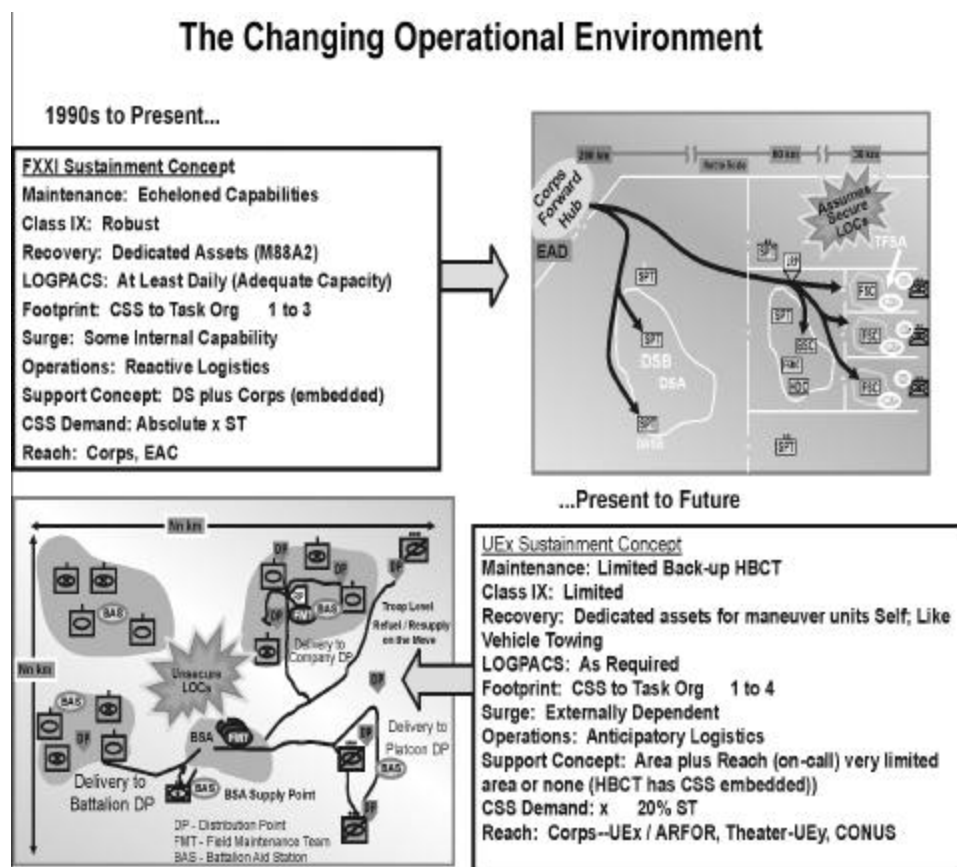
CSS units have been chronically under-resourced across the board for years. As GEN Richard Cody, Army Vice Chief of Staff told the House Armed Services Committee in February 2005,

As the Cold War ended, the Army anticipated its need to transform to meet the emerging threats of the 21st Century. Before 9-11, the Army was already on a course to realize its transformation, but at a very deliberate pace and in a much more constrained resource environment. At the time, the Army was forced to assume risk to the current force in order to execute our transformation. One example of where we assumed risk was in force protection and offensive requirements for our combat support and combat service support units. In the past, our doctrine called for these units to operate in "rear areas" where threats were historically minimal. This doctrine led to a resource strategy in some cases where combat support or combat service support units would have less modern equipment in fewer quantities so that the combat formations could have full amounts of the latest technology.⁵⁴

CSS isn't "sexy" like combat arms; there are no transformation enabler images to rival the Stryker or the Future Combat Vehicle. War stories of heroic logisticians rarely stand out like Audie Murphy, and there are no CSS symbolic images like an M1A1 or the Apache that stir national pride and exude combat power. Images of fuel tankers, maintenance contact trucks or even ambulances still conjure up misleading images of "rear area". In fact, the misnomer "tooth to tail" is actually still heard from some senior Army and Department of Defense leaders. Loss of logistics capability is not like losing a chameleon-like tail; it is the loss of a critical enabler and capability, the loss of essential combat power for the force. This is particularly true as the desire to pare down logistics units in the battlespace asks the force in the battlespace to assume more risk. For a short time, the tragic incident of the 507th Maintenance Company brought CSS equipping deficits and CSS lethality capability requirements in a 360° battlespace to light. Although the focus of this paper is on CSS formations, recommend the Army build that confidence in soldiers in any area of expertise by reexamining the application of lethality as a capability at every level, from Soldier to unit. FMI 4-90.1, Heavy Brigade Combat Team Logistics, describes today's battlefield:

In today's contemporary operating environment (COE), support can no longer be viewed as a free, continuous, and secure function. In many types of operations, support is at risk as much as maneuver, with maneuver units having an effective duration that will expire if support is not re-established....Hence, there is a definite necessity to resource basic Soldier skills training to ensure that the logistician Soldiers and leaders are competent in combat skills of convoy

defense, patrolling and perimeter defense, and the use of the most up-to-date enabling technology to integrate the force protection and technical sustainment functions into overall tactical-level sustainment operations within logistical units.⁵⁵



“Figure 1, The Changing Operational Environment”⁵⁶

Conclusion

Transformation is about improving the capability to execute military operations across the spectrum of conflict. Although there are competing demands for resourcing improvement, the CSS community has important requirements that should be resourced to enable better capability throughout the force. The Army needs to attain the goals articulated in the current four CSS transformation focus areas, Connecting the Army Logistician, Modernizing Theater Distribution, Improve Force Reception, and Integrate the Supply Chain.⁵⁷ These are vital

changes that must be made, and these improvements will have strategic as well as operational and tactical impacts. Although there is progress within each of these areas, competition for adequate funding will determine when and if these goals come to fruition. Historically, anecdotal evidence indicates that logistics improvements have not been viewed as having the cachet to draw adequate funding unless the capability resides in a powerful Congressional district or until disaster occurs to highlight the requirement. Identifiable improvements in weaponry appear to get the funding over seemingly dry, more bureaucratic improvements.

The Army must rapidly decide on CSS force structure design. The CSS final modular support structures have not been cast, although it has been roughly two years since the first modular BCT was established. How ARFORGEN will work with CSS unit design—or if ARFORGEN will work with the demands of our current CSS operational tempo—remains to be seen. CSS units are required to deploy on the same rotational turnover schedule as the BCTs but most of Army CSS is in the reserves and by the ARFORGEN design, has a different rotational timeline. Many reserve units are not manned or equipped for employment, although this area is being worked. Presently, the CSS community has Soldiers that are able to acquire an understanding of the Army's logistics system on the battlefield as they grow as leaders by accumulating experience at all levels of support, from within the BCT to theater support levels. Assigning active duty soldiers to one or a few logistics units or geographical location will provide the Soldier and family members with improved stability and predictability—but may not create as knowledgeable and versatile soldier as we presently have in the CSS community.

Recommend the Army add a focus area on improving CSS lethality. CSS formations require more than additional weapons and force protection equipment; lethality must be a CSS capability resident in the unit force structure and trained to standard across the active and reserve force in order to provide an agile, capable and lethal delivery of support regardless of the nature of the operational environment. Improvements on CSS unit lethality capability should be applied through examination and application of the DOTLMPF and have a resident lethal capability established in each unit, like the military police augmentation some CSS units had during OIF.⁵⁸ Support elements have serious deficits this area and require major holistic improvements in associated CSS education, equipping, and training. CSS units executing battlefield supply distribution in a non-linear, non-contiguous 360° battlespace are vulnerable, lucrative targets. With the geographical dispersion of forces, CSS units must have the capability to defend, but also be visibly and materially capable to deter enemy attacks, and to pursue when the situation is ripe for more aggressive action. CSS soldiers want to be empowered to successfully execute missions and have the capability to apply some lethal effect on the enemy

when threatened. As mentioned previously, historically the Army was able to take risk in CSS force structure in a linear, echeloned structure; the conflict paradigm has changed. Today's battlefield environment requires 360° force protection capability whether stationary or on the move. This is particularly critical in the Army National Guard and Reserve CSS elements, as these Soldiers get far less exposure to quality, standardized training due to geographic dispersion and limited time to focus on training, but are essential to supporting the force in any expeditionary operation.

If lethality is not accepted and applied as a capability to CSS units and delineated particularly in a lethality section that will provide interdictive and mitigating effects on the threat, CSS formations, particularly our reserve elements, could greatly benefit from:

- Communications upgrades across the board but particularly more comprehensive fielding of radios, NVGs, long line of sight capability to see first, FBCB2 or like item to see other elements on the battlefield, and heavy fielding of GPS devices.
- Couple this with hard training, a stair-step approach to individual training validation and then team competition in executing excellence in infantry standard basics of, for example, defending a perimeter. Although current convoy threats require lethal convoy formation action and/or other effects mitigation, we must not be lulled in focusing on today's challenges alone. A top down approach to understanding CSS needs in a fluid battlefield situation—particularly in perimeter defense—could save countless lives in the next conflict.
- Export and continue the current great training on CSS live fires and convoy actions. Soldiers want to have confidence in individual and unit weapons, and this can only be achieved through maximum practice, training, and qualification. Waiting six months prior to deployment to do decent training is not getting ready for the “come as you are” emergency, or the “fight tonight”.
- Exploit virtual, situational training scenarios and capabilities such as Janus and develop challenging lane training for home station implementation. This is especially critical for the majority of CSS units that receive no JRTC or NTC training, and especially for Reserve units.
- Establish and export mobile training teams (MTTs) validated by the Infantry Center that periodically evaluate and validate levels of unit readiness throughout the ARFORGEN time model. MTT members should be validated by demonstrating superior basic combat essential training and training techniques prior to evaluation duty.

- Virtual training on JANUS or other tools should be made available and maximized for CSS units above BCT level, as few CSS units get NTC or JRTC experience.
- One of the less expensive ways to improve education, training and lethality is to ensure CSS lessons learned and tips for improvised or virtual training are available for easy access and use. Web based education and training should be encouraged and exercised whenever possible. Recommend a “one stop shop” for CSS lessons learned and training techniques, much like the establishment of research sites in our senior service colleges. Designating CASCOT as the information center for CSS lessons learned could broker better information links with the Center for Army Lessons Learned (CALL) and units with operational experiences to share. Presently, trying to extract information on CSS lessons learned from unit rotations on the CALL website, for example, takes far more work than it should if effort is applied to establishing a principal CSS training information web site with links. Many units have deployment experience in OIF/OEF now. With CSS unit rotations of three to six years gaps into hostile areas, we will lose these lessons learned without valuable training. Lessons learned from present and past conflicts, especially Vietnam, should be re-surfaced for easy retrieval. The Center for Army Lessons Learned is a terrific institution and has spent a great deal of money capturing lessons, but it does little good if Soldiers have to hunt through a myriad of documents to get information on such an important area that has applicability to a large part of the Army population.

The Army has learned some valuable insight since the inception of Army transformation as a force modernization effort in 1999 on what needs to change in our force to keep us relevant and ready. As identified in the Army G4 white paper, some very valuable desired attributes and tools have been identified to continue to enhance the CSS capability in getting the right stuff to the right place at the right time. However, the Army must fully recognize the force protection vulnerabilities of CSS units. Lethality must be recognized as a capability goal, and should join the company of the capability goals of connecting logisticians, modernizing supply distribution, improving force protection, and attaining an integrated supply chain. Soldiers in the CSS community and across the force are proven warriors; they will continue to be tested for some time to come. The lack of adequate CSS combat training and equipment for units does not mean CSS soldiers lack “warrior ethos.” The surviving Soldiers of the on the 507th Maintenance Company ambush had warrior ethos in spades—at the time of the attack, they did not have the capability to defend themselves due to lack of equipment, training, or expectation (situational

awareness) of the threat. Those soldiers gained a brutal life lesson and a bitter desire to engage with and kill the enemy.⁵⁹ CSS units must have the resident unit capability to apply lethal force to the threat when necessary to accomplish the support mission.⁶⁰ Send a message to the enemy—and transform the capabilities of CSS units to accomplish the support mission. Give CSS soldiers the capacity to adequately defend and deter threats by creating a doctrinal addition of lethality in its force structure that has been assessed through the DOTLMPF imperatives.

Endnotes

¹ Tony Giddens, "What is transforming world society," 07 November 2001; available from <http://www.lse.ac.uk/collections/meetthedirector/pdf/07-Nov-01.pdf>; Internet; accessed 01 March 2006. Dr. Giddens, the director of the London School of Economics, gave this lecture and used events of 11 September 2001 to amplify his points on globalization.

² Ibid; see also Freidman, Thomas L., *The Lexus and the Olive Tree* (New York: 1st Anchor Books edition April 2000; originally published New York: Farrar, Strauss, and Giroux, LLC, 1999), 9.

³ Ibid.

⁴ Congress, House, Testimony of LTG Paul Kern, Sub-committee Airland Forces, Committee on Armed Services, *Army Modernization*, First Session, 106th Congress, 03 March 1999; Internet; <http://armed-services.senate.gov/statemnt/1999/990303pk.pdf> (accessed 01 March 2006).

⁵ Ibid.

⁶ Congress, House, Testimony of GEN Eric Shinseki, House Armed Services Committee, *Status of Forces*, first session, 106th Congress, 21 October 1999. Also at <http://www.house.gov/hasc/testimony/106thcongress/99-10-21shinseki.htm>.

⁷ U.S. General Accounting Office, *Military Transformation: Army has a Comprehensive Plan for Managing Its Transformation but faces Major Challenges* (Washington, D.C.: U.S. General Accounting Office, November 2001). Also available at Internet, <http://www.gao.gov/new.items/d0296.pdf>, accessed 09 and 11 Mar 06. The referenced Army Transformation Campaign Plan (ATCP), which tied all Army organizations to Army and Joint transformation objectives, goals, milestones, other lines of operations also had links, where applicable, to the funding resource line. Information based on author's professional experience and input with Army transformation activity and the ATCP, as lead action officer for Line of Operation 9, Supporting and Sustaining the Force (U.S. Army ODCSLOG), fall 1999-April 2001.

⁸ DOD Office of Force Transformation website, <http://www.oft.osd.mil/> last accessed 31 March 2006. Reader can explore Service transformation plans and associated documents and links.

⁹ For several earlier modularity concept documents, see U.S. Army Training and Doctrine Command (TRADOC) Pamphlet (TRADOC PAM) 525-77, *Battlefield Distribution*, (Ft Monroe:

February 1998); also at Internet, <http://www.tradoc.army.mil/tpubs/pams/p525-77.htm> ; TRADOC PAM 525-53, *Operational Concept, Combat Service Support* (Ft Monroe: 1 April 1997), also at Internet, <http://www.tradoc.army.mil/tpubs/pams/p525-76.htm> ; TRADOC PAM 525-68, *Concept for Modularity* (Ft Monroe: 10 January 1995); Internet, <http://www.tradoc.army.mil/tpubs/pams/p525-68.htm> .

¹⁰ See note 7 above. Based on professional experience as Army ODCSLOG Transformation cell chief, Pentagon, October 1999-April 2001.

¹¹ GEN Eric Shinseki, remarks to U.S. Army Logistics Summit 2000, "Logistics in the Army's Transformation", *Army Logistician Magazine*, Volume 32, Issue 4, July/August 2000; at Internet, <http://www.almc.army.mil/alog/issues/JulAug00/Page1.htm> accessed 11 MAR 06.

¹² Mark J. O'Konski, "Revolution in Military Logistics: An Overview", *Army Logistician Magazine*, Volume 31, Issue 1, January/February 1999; at Internet, <http://www.almc.army.mil/ALOG/issues/JanFeb99/MS%20364.htm> (accessed 10 March 06).

¹³ Author's observations as Chief, U.S. Army DCSLOG Transformation Cell, September 1999-April 2001. See also Congress, House, Testimony of Assistant Secretary of the Army Paul J. Hoepfer, House Armed Services Committee (HASC), Internet, http://www.acq.osd.mil/log/jpp/product_support/hoepfer4.htm (accessed 01 March 2006.) On 07 June 2000 Mr. Hoepfer appeared before the HASC "to discuss the Army's efforts to improve efficiency and effectiveness of its logistics processes, systems, and infrastructure." Extract: "Logistics Transformation: 'More Teeth, Less Tail' 'The Army is working hard to reduce the combat support and combat service support "tail" that supports its fighting forces' "teeth." We estimate that support units and sustainment stocks for any operation account for as much as 80 to 90 percent of the soldiers, equipment, and supplies on the ground in a combat theater.

For the logistics community, the first task is to get to the fight faster, with the right mix of equipment and sustainment capabilities at the right time. The second task is a reduced footprint or presence on the battlefield. In general, our footprint for deployed forces is unacceptably large driven sometimes by unrealistic replenishment demands but also by a complex inventory of multiple types of equipment, the sheer numbers of which drive up the stockage requirements for numerous lines of repair parts. The third component of logistics transformation is the development of a single, Army-wide logistics provider. From factory to foxhole, we seek one seamless integrated logistics system that provides the soldier in the field exactly what he needs, when he needs it."

¹⁴ Interview, GEN Eric Shinseki, with Public Broadcasting System program Frontline, available from <http://www.pbs.org/wgbh/pages/frontline/shows/future/interviews/shinseki.html> ; Internet; accessed 11 MAR 06.

¹⁵ "Evolving Army Transformation", briefing slides, US Army G4, Pentagon, dated 07 February 2006.

¹⁶ Congress, House, Testimony of Claude Bolton, et. al, Tactical Air and Land Forces Subcommittee, HASC, ,*Army Modular Force, Current Force Protection Program Initiatives, and other Major Ground Component Acquisition Programs*, 1st Session, 109th Congress, 16 March 2005.

¹⁷ Congress, Senate, Statement of Secretary of Defense Donald H. Rumsfeld, HASC, FY 2007 Posture Statement, 8 February 2006; Internet; <http://www.house.gov/hasc/schedules/2-8-06RumsfeldTestimony.pdf> accessed 02 March 2006.

¹⁸ Congress, House, Testimony of Claude M. Bolton, Jr. Asst Secretary of the Army (ALT), Lieutenant General James J. Lovelace, Jr. Deputy Chief of Staff, G3, U.S. Army, LTG David F. Melcher, Deputy Chief Of Staff, G8, U.S. Army, on Army Modular Force, Current Force Protection Program Initiatives, and other Major Ground Component Acquisition Programs, before the Tactical Air and Land Forces Subcommittee, HASC, on 16 March 2005, accessed 13 March 2006; <http://www.house.gov/hasc/testimony/109thcongress/TacAir%20Land/3-16-05BoltonLovelaceMelcher.pdf>; Internet; accessed 13 March 2006.

¹⁹ Ibid.

²⁰ Gen Pete Schoomaker, CSA comments to the Association of the United States Army (AUSA) Eisenhower Luncheon, 07 October 2003; <http://www.army.mil/leaders/CSA/speeches/20031007.html> (accessed 22 February 2006).

²¹ COL Rickey Smith, "The Army Modular Force," briefing slides, 23 February 2005; http://72.14.203.104/search?q=cache:fH0MMoheSgJ:www.blueskybroadcast.com/Client/Army_Stratcom/+The+Army+Modular+Force+&hl=en&gl=us&ct=clnk&cd=1 (accessed 23 February 2006).

²² U.S. Army Futures Center mission overview, <http://www.tradoc.army.mil/pao/TNSarchives/October04/100204.htm>, Army Futures Center mission overview.

²³ Army Modernization Plan 2002, http://www.army.mil/features/MODPlan/2002/wA4_FLv03a.pdf, p.A-55.

²⁴ <http://www.hqda.army.mil/logweb/UpdatedCombinedpapers.pdf>, Army G4 White Paper, Army Logistics: Delivering Materiel Readiness to the Army, revised April 2005, p.1 (accessed 12 MAR 06).

²⁵ Ibid.

²⁶ Congress, House, Testimony of LTG Claude V. Christianson, Deputy Chief of Staff, G-4, United States Army, before the HASC, Subcommittee on Readiness, Logistics Readiness of the United States, 30 March 2004, available from <http://www.house.gov/hasc/openingstatementsandpressreleases/108thcongress/04-03-30christianson.html>; Internet (accessed 03 March 2006). Extracted quote in testimony context: "The Army's logistics transformation effort is taking place amidst other dramatic changes that impact our logistics systems. Among these are the move towards expeditionary and modular formations, the development of Future Combat Systems, the need to support the simultaneous deployment, employment and sustainment of joint forces, and the globalization of the defense industrial base. Each of these changes will contribute to logistics transformation while posing additional challenges.....If we do not connect Army logisticians, improve the capability of the distribution system, modernize force reception, and provide integrated supply management, we will study these same lessons after the next major conflict. These four goals must be achieved as one – they are interdependent, and the capability delivered by all four is much greater than

their sum.” In April, 2005, the US Army G4 White Paper laid out the direction of Army logistics transformation efforts; a more comprehensive discussion of all these goals can be reviewed in that paper and is recommended reading, but a rough synopsis is presented here. The four key updated logistics focus areas for Army transformation are, as LTG Chrisensen articulated for the HASC: Connecting Army Logisticians, Modernizing Theater Distribution, Improve Force Reception, and Integrate the Supply Chain. The Army is fielding enablers now to logistics elements to bring improved capability in these areas. In keeping with the Army’s approach on equipment fielding, these enablers have been assessed through the “DOTLMPF solution set” (Army doctrine, organization, training, leadership development, materiel, personnel and facilities) to mitigate associated issues. These solutions, in keeping with the TRADOC Futures Center (now Army Capabilities Center (ARCIC)) have also been examined with a view of Joint applicability. See Army G4 White Paper, *Army Logistics: Delivering Materiel Readiness to the Army*, revised April 2005, 20 pages; and “TRADOC Futures Center: *Building the Army’s Future Force*”, TRADOC News Service, August 2004, <http://www.tradoc.army.mil/pao/TNSarchives/August04/081104.htm> (accessed 20 March 2006).

²⁷ Army G4 White Paper as discussed above, p.2.

²⁸ Author’s observation and experience as commander, 203d Forward Support Battalion, 3d BCT/3d Infantry Division during OIF. All 3BCT elements practiced data “blasting” prior to operations in Iraq with mixed success. Operational conditions in Iraq proved that method was largely ineffective.

²⁹ Army Logistics White Paper, *Army Logistics: Delivering Materiel Readiness to the Army*, revised April 2005, p.2.

³⁰ Ibid, p.3.

³¹ Author’s experience. See note 31 above.

³² White paper, p.4.

³³ Ibid, p. 6.

³⁴ Author’s experience as Company commander, 541 Transportation Company (Petroleum) during Operations Desert Shield/Desert Storm, and as Battalion commander, 203d FSB, 3BCT/3d ID during Operations Desert Spring and OIF; observations of several transportation convoys in the previously mentioned operations..

³⁵ See note 31. Author’s experience: the 3d ID BCT S4s had FBCB2 in assigned M113s. In theory, the BCT S4 was co-located with the FSB during operations. In practice, this was rarely the case, leaving the FSB essentially “blind” compared to its supported units. FBCB2 capability was requested for the FSBs prior to operations, but denied based on the rationale of the placement of the BCT S4 and the scarcity of FBCB2 equipment.

³⁶ Ibid.

³⁷ G4 White paper, see note 32 above, p.4

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Information Paper, *Logistics STAMIS Impact on Modular Concept of Support*; http://www.hqda.army.mil/logweb/cl_whitepaper_update.pdf, at US Army G4 Web site, undated, (accessed 31 March 06).

⁴¹ Ibid, overview paragraph.

⁴² G4 White paper, per note 32, p. 6.

⁴³ Ibid, pp.10-11.

⁴⁴ Ibid.

⁴⁵ Ibid, p.11.

⁴⁶ See footnote 26; testimony of LTG Christenson to HASC, 30 March 2004.

⁴⁷ G4 White Paper, p. 15.

⁴⁸ Briefings from Army logistics senior leaders, Logistics Transformation Agency representatives, Army G4 and J4 staff to US Army War College students, March 2006.

⁴⁹ See note 9 above; access at <http://www.tradoc.army.mil/tpubs/pams/p525-68.htm>, TRADOC PAM 525-68, Concept for Modularity, January 1995, Internet. In fact, the boldest effort on modularizing CSS began in the mid-1980s when functional CSS battalions were converted into Forward Support Battalions (FSBs). In January 1995, attributes of CSS modularity and Functionally Emulative Increments (FEIs) were discussed in TRADOC PAM 525-68, Concept for Modularity. FEIs are described as "Organizations which are constructed with increments, so that each increment reflects the complete essence (functions) of the organization. The increments are interchangeable, expandable (to all or part of the whole), and tailorable....FEIs will be applied primarily to CSS organizations at EAD and EAC. The projection of forces from CONUS or forward presence locations for contingency operations will challenge sustainment operations. FEIs will enable CSS commanders to provide more precise functions and capabilities needed in force projection across the entire range of operations." (extract from paras1, 35). Although the term FEI may be extant, the FSBs are now converting to Brigade Support Battalions (BSBs); the rest of the CSS structure is still under modular re-construction, but the purpose is to provide that same FEI flexibility.

⁵⁰ U.S. General Accounting Office, *Force Structure: Preliminary Observations on Army Plans to Implement and Fund Modular Forces*, GAO report number GAO-05-443T (Washington, D.C.: U.S. General Accounting Office, 16 March 2005). Also available at <http://www.gao.gov/new.items/d05443t.pdf>, Internet (accessed 13 March 2006). "This means that for some time to come, even as the Army makes progress in achieving greater uniformity across the force, there will be a number of variations in the size and capability of available support units. Also, as with the decision to add additional battalions, until the Army completes all of its force structure designs for support brigades, it will not have a total picture of its personnel and equipment requirements."

⁵¹ US Army 2006 Posture Statement released February 2006, located at <http://www.army.mil/aps/06/pdf/APS2006.pdf>, Internet (accessed 24 February 2005).

⁵² Combined Arms Support Command (CASCOM), "ARFORGEN Training Support Package Presentation" briefing, slide 5, created 18 February 2006; <http://www.cascom.army.mil/private/TD/Multifunctional/TSPs/ARFORGEN/index.htm>. Internet (accessed on 15 March 2006). Note slight modification of slide; original slide had remarks reference "eagles and ducks". As comments were not self-explanatory and do not appear in any other portrayal of ARFORGEN, comments were removed. Please see original at link.

⁵³ Congressional Budget Office, *Options for Restructuring the Army*, May 2005. Appendix B: The Army's Plan for Modularity: Implications for the Army's Dependence on the Reserve Component, 1st and 2d paragraph in it's entirety: "...[T]he modularity plan will increase the degree to which combat units in the active Army rely on EAD support units in the reserve component, unless the Army receives a substantial increase in active end strength or greatly reduces the number of personnel required to provide EAD support to combat units. Under CBO's assumptions about the level of support that a modular force might require, up to 70 percent of the personnel needed to support the Army's active combat forces would come from the reserve component, as opposed to 60 percent for the current force...In general (without considering the other possible effects of modularity), that increase in dependence would represent an additional 18,000 to 19,000 reserve personnel who would have to be mobilized and deployed for a major combat operation. Similarly, it would increase the number of reserve personnel who would need to be mobilized to support extended deployments by 3,000 to 4,000 if the Army was fully committed (that is, if all of its forces were doing peacekeeping all of the time). That effect could be increased or decreased, however, by decisions that the Army might make. If the Army required additional active personnel to achieve its modularity plan, that effect would be greatly reduced. If the Army tried to expand to a 48-brigade force within its current end strength limits, that effect would be increased."

⁵⁴ Congress, House, Testimony of GEN Richard Cody, Armed Services Committee, *U.S. Army Readiness*, 109th Congress, 1st Session; <http://www.army.mil/leaders/leaders/vcsa/testimony/20050202.html>; Internet (accessed at 24 February 2006).

⁵⁵ Field Manual Interim (FMI) 4-90.1, Logistics Overview of the Heavy Brigade Combat Team, paras 1-5-6, 15 March 2005.

⁵⁶ Ibid, Figure 1-1.

⁵⁷ Army G4 White Paper, p. 1.

⁵⁸ Author's experience during OIF as Commander, 203d Forward Support Battalion (FSB) as part of the 3d Brigade Combat Team (3BCT), 3d Infantry Division (Mechanized) (3d ID).

⁵⁹ Author's experience as Commander, 203d FSB, 3BCT/3d ID during OIF. The 203d received the survivors of 507th Maintenance Company attack incident and had the mission to repatriate them back to their parent unit. Author bases views on the soldiers and the incident in discussion with 507th Soldiers, reading first hand accounts and observation of those Soldiers' behavior when they were part of the 203d.

⁶⁰ Author's note. See US Army Field Manual (FM) 3-19.1, Military Police Operations, 31 January 2002. Chapter 3 for discussion of threat levels. Threat levels 1 and II are described as: "Level 1: Agents, saboteurs, sympathizers and terrorists. These threats should be handled by unit, base, base cluster self defense measures...Level II: small tactical units, unconventional warfare forces, guerillas, and bypassed enemy forces. These threats should be handled by self-defense measures and response forces with supporting fires." Level III, the highest threat level category, refers to large tactical force elements which would require a tactical combat force to engage it. Although CSS units historically have been expected to handle levels I and II, as threat technological capabilities to deliver harm have increased for hostile elements, CSS unit improvements in lethality and force protection have been few until experiences in Iraq have forced improvements. Anecdotal evidence that has surfaced in discussions with former CSS battalion commanders that have served in Iraq: improvements were made piecemeal without thought of holistically improving the lethality of CSS units. There has been little follow-on action in this area in capturing lethality as a desired capability to be developed through the CSS units via DOTLMPF application.

